

Storm Water Advisory Panel Presentation

August 28, 2012



Welcome and Introductions

David Buck, P.E., Public Works Director/City Engineer

David Henderson, Utility Director

Mike Susong, P.E., Assistant City Engineer

Michael Massonne, DLZ Indiana, LLC



Today's Presentation

- Revisit the purpose of the advisory panel
- Review the proposed stormwater projects and estimated costs



Purpose of the Advisory Panel

- Provide vital feedback on stormwater issues
- Represent the West Lafayette Stormwater Program service area
- Supporting community education and outreach initiatives of the stormwater program



Proposed Stormwater Capital Projects



Purpose of Proposed Capital Program

- Purpose
 - Improve quality of service and maintenance of system
 - Improve water quality in waterways
 - Comply with state and federal requirements
(Municipal Separate Storm Sewer (MS4) Permit)
- Program Components
 - Proposed stormwater capital improvement projects
 - Proposed City-Wide maintenance projects



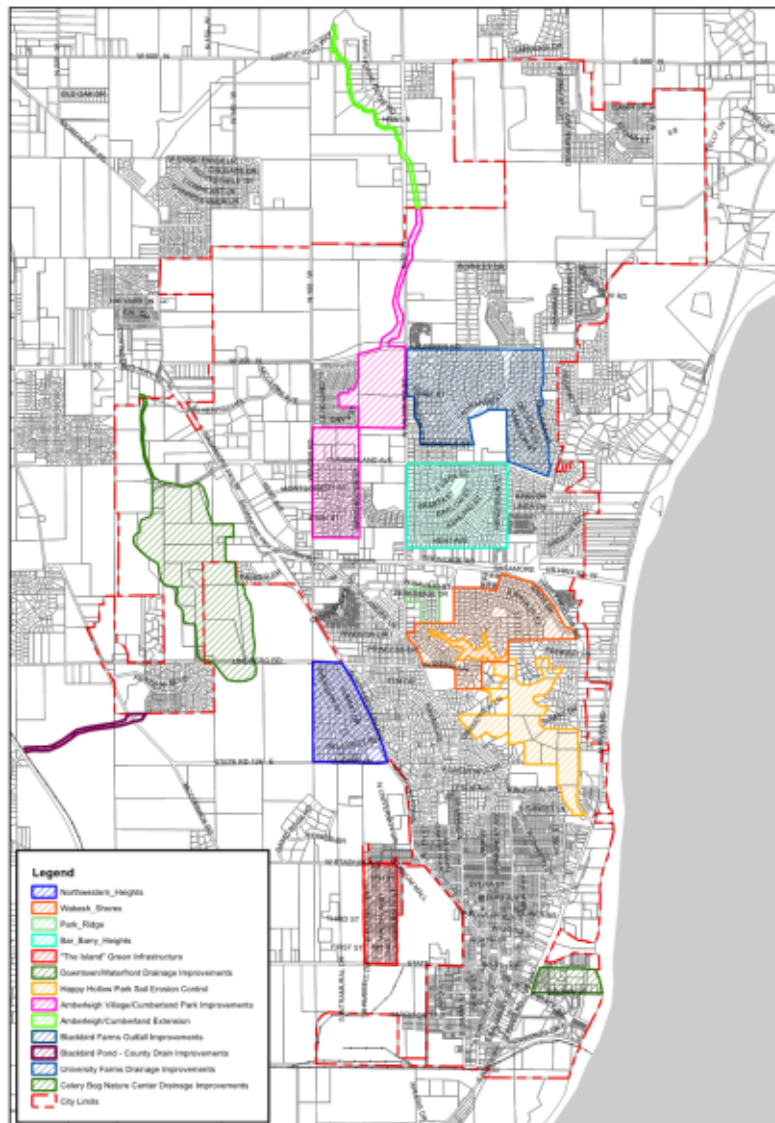
Proposed Stormwater Projects

- “The Island” Green Infrastructure
- Downtown/Waterfront Drainage Improvements
- Happy Hollow Park Erosion Control
- Blackbird Pond Stormwater Improvements
- Plaza Parks/Cumberland Park Drainage Improvements
- University Farms Drainage Improvements
- Celery Bog Nature Center Drainage Improvements



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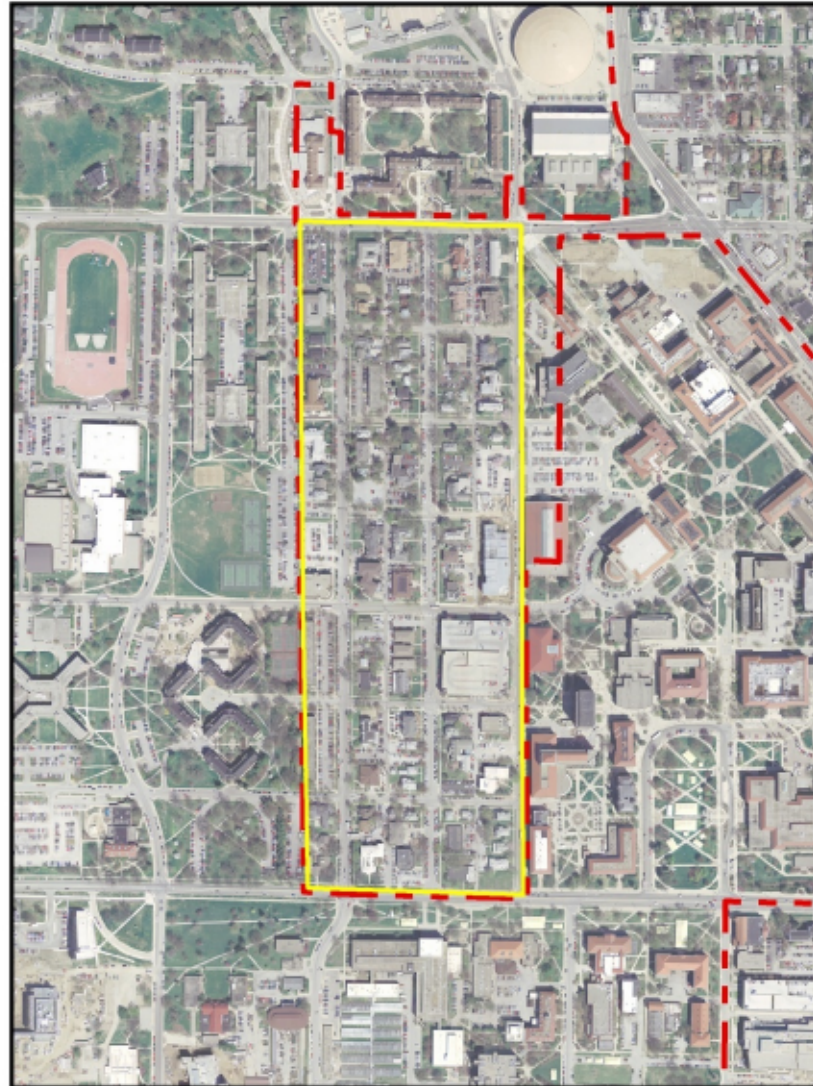


Legend

-  Northwestern_Heights
-  Wabash_Shores
-  Park_Ridge
-  Bar_Barry_Heights
-  "The Island" Green Infrastructure
-  Downtown/Waterfront Drainage Improvements
-  Happy Hollow Park Soil Erosion Control
-  Amberleigh Village/Cumberland Park Improvements
-  Amberleigh/Cumberland Extension
-  Blackbird Farms Outfall Improvements
-  Blackbird Pond - County Drain Improvements
-  University Farms Drainage Improvements
-  Celery Bog Nature Center Drainage Improvements
-  City Limits



“The Island” Green Infrastructure



“The Island” Green Infrastructure

- **Project:** Rain garden and rain barrel installation
- **Est. Cost:** \$2,400,000
- **Benefits**
 - Improved water quality
 - Enhanced aesthetics with through streetscaping with native plantings
 - Additional storm inlets and curb cuts
 - Trash and silt capture



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Downtown/Waterfront Drainage Improvements



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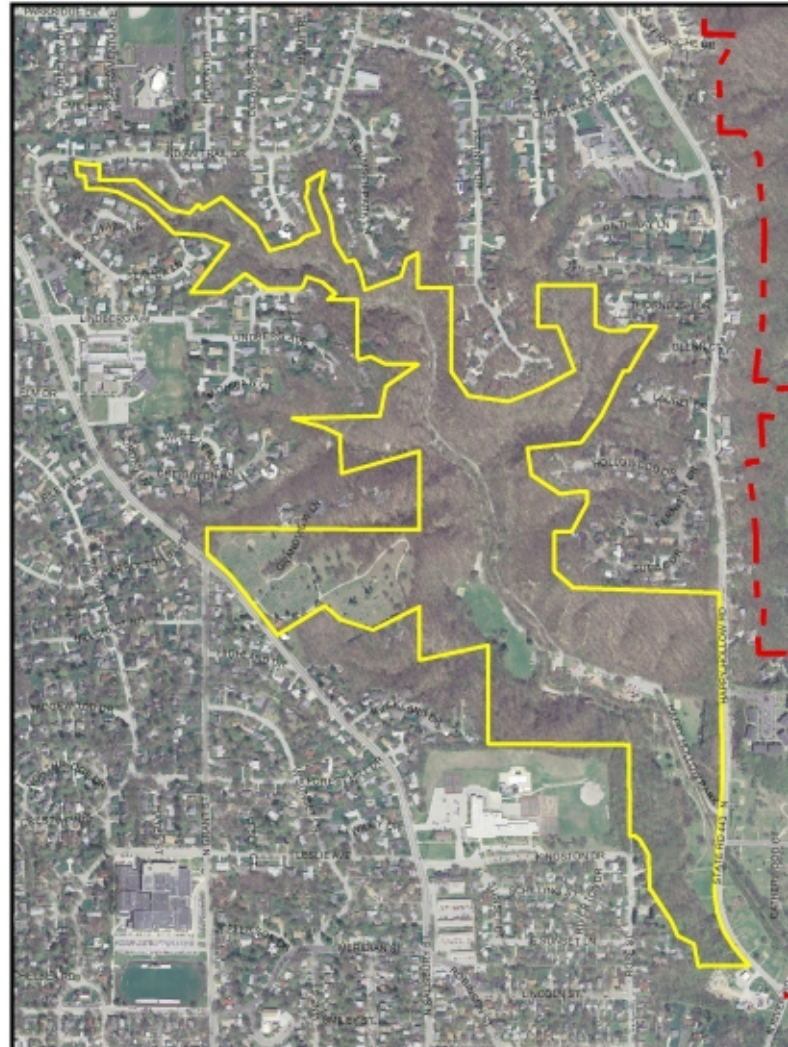


Downtown/Waterfront Drainage Improvements

- **Project:** Drainage improvements
- **Est. Cost:** \$500,000
- **Benefits**
 - Reduced stormwater runoff through green infrastructure implementation – treatment wetlands and rain gardens
 - Improved drainage capacity in vicinity for future development with addition of storm sewer and water quality units



Happy Hollow Park Erosion Control

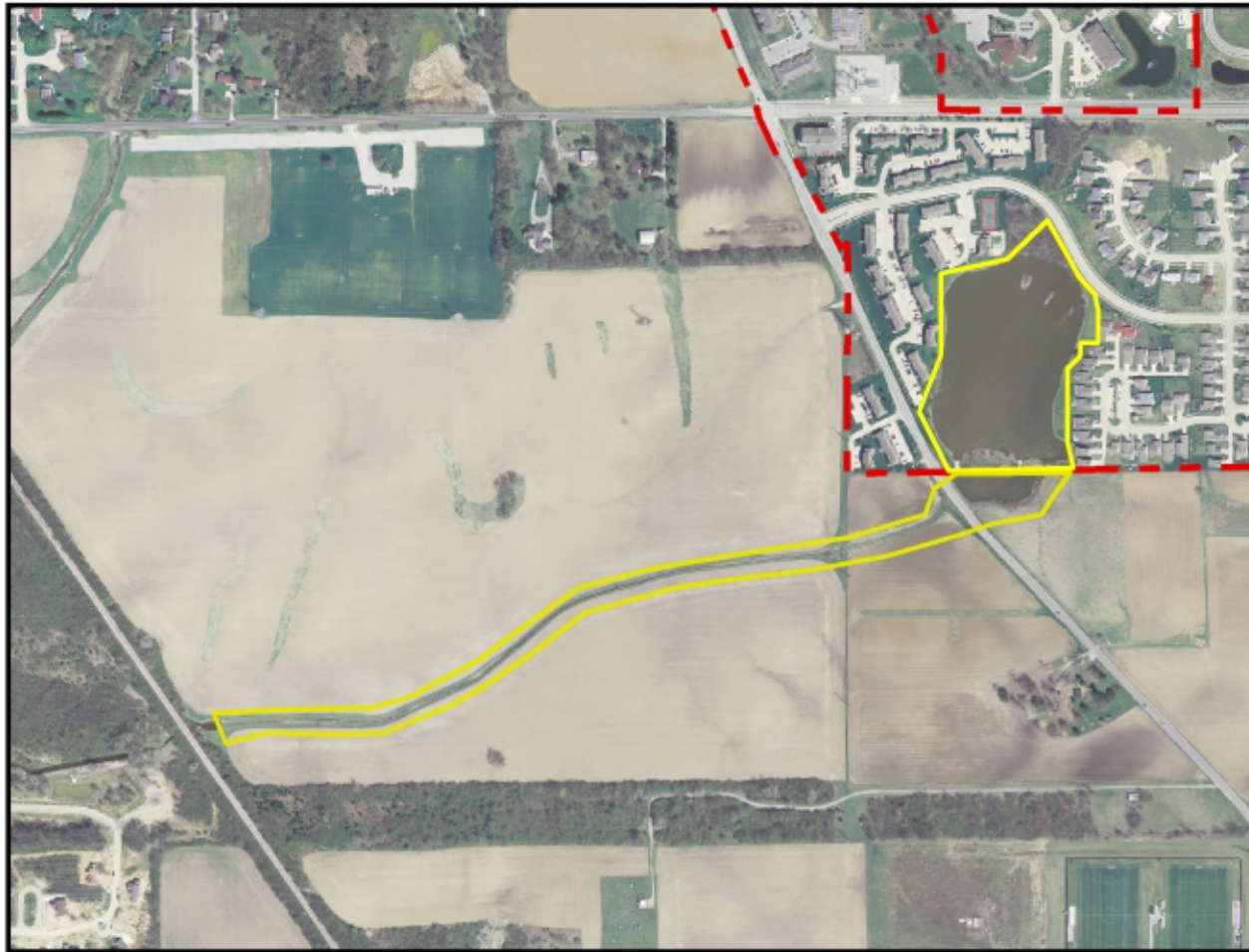


Happy Hollow Park Erosion Control

- **Project:** Slope stabilization and erosion control
- **Est. Cost:** \$4,600,000
- **Benefits**
 - Systematic approach to Happy Hollow ravine erosion control
 - Improved drainage in park and neighborhoods with new channelization and piping
 - Ongoing slope stabilization in areas most likely to fail
 - Reduced sediment laden runoff flowing into Wabash River



Blackbird Pond Stormwater Improvements



Blackbird Pond Stormwater Improvements

- **Project:** Detention basin retrofit, bank stabilization
- **Est. Cost:** \$800,000
- **Benefits**
 - Enhanced dissolved nitrogen and phosphorus pollutant removal
 - Stream bank area stabilization, wetland grading and native wetland plantings
 - Channel lining for drain stabilization west of McCormick Road



Plaza Parks/Cumberland Park Drainage Improvements



Plaza Parks/Cumberland Park Improvements

- **Project:** Water quality, drainage improvements
- **Est. Cost:** \$2,800,000
- **Benefits**
 - Improved runoff conveyance capacity of Boes Ditch
 - Stabilization of wooded drainageways through Cumberland Park
 - Reduced standing water, flooding in Plaza Parks neighborhood



University Farms Drainage Improvements



University Farms Drainage Improvements

- **Project:** Drainage improvements
- **Est. Cost:** \$1,200,000
- **Benefits**
 - Reduced occurrences of standing water in backyards and flooded basements
 - Improved drainage throughout
 - Water quality enhancements through infiltration practices



Celery Bog Drainage Improvements



Celery Bog Drainage Improvements

- **Project:** Drainage improvements
- **Est. Cost:** \$1,000,000
- **Benefits**
 - Water quality enhancements through vegetative filters and wetland grading
 - Improved flow control with drainage structures placed along northern edge of project area
 - Improved access for nature center recreational users



Estimated Capital Improvement Projects

Proposed Project	Estimated Cost
"The Island" Green Infrastructure	\$2,400,000
Downtown/Waterfront Drainage Improvements	\$500,000
Happy Hollow Park Erosion Control	\$4,600,000
Blackbird Pond Stormwater Improvements	\$800,000
Plaza Parks/Cumberland Park Drainage Improvements	\$2,800,000
University Farms Drainage Improvements	\$1,200,000
Celery Bog Nature Center Drainage Improvements	\$1,000,000
TOTAL ESTIMATED COST:	\$13,300,000



City-Wide Maintenance Projects

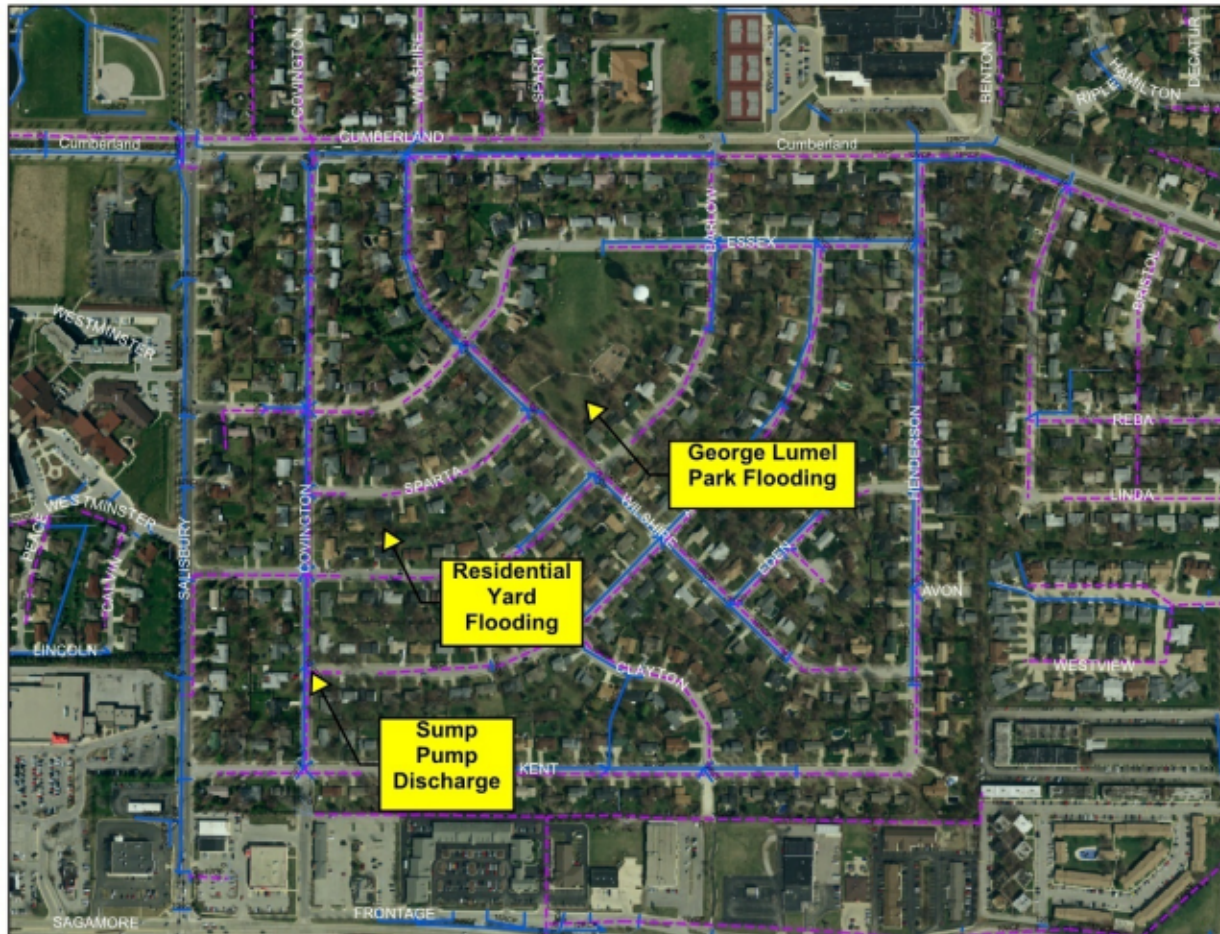


What are City-Wide Maintenance Projects?

- Mainly complaint driven
- Perpetual problems that can be solved with minimal design & funds
- Additional projects added yearly as they are encountered



Bar Barry Heights: Maintenance Projects



Bar Barry Heights: Residential Yard Flooding

- Drainage patterns cause flooding and standing water during rain events
- Neighborhood wide health benefits
- Directly benefits six or more properties
- Estimated Project Cost: \$105,000



George Lummel Park Flooding

- Recreational areas hold water after rain events
- Area wide health benefits
- Estimated Project Cost: \$130,000



Bar Barry Heights: Sump Pump Discharges

- Discharges into road
- Removes street flooding and icing
- Wide public benefit
- Estimated Project Cost: \$46,000



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Park Ridge & Wabash Shores: Maintenance Projects



Indian Trail Drive Street Flooding

- Clogged inlet causes street flooding
- Ongoing routine maintenance required
- Wide public benefit
- Estimated Project Cost: \$19,500



Wabash Shores Residential Yard Flooding

- Yard floods and holds water during rain events
- Offsite runoff flows to surrounding yards
- Area wide health benefits
- Directly benefits three or more properties



- Estimated Project Cost: \$91,500



Nighthawk and Navajo Intersection Flooding

- Low point at northwest corner of intersection
- Holds water during rain events
- Estimated Project Cost: \$20,500

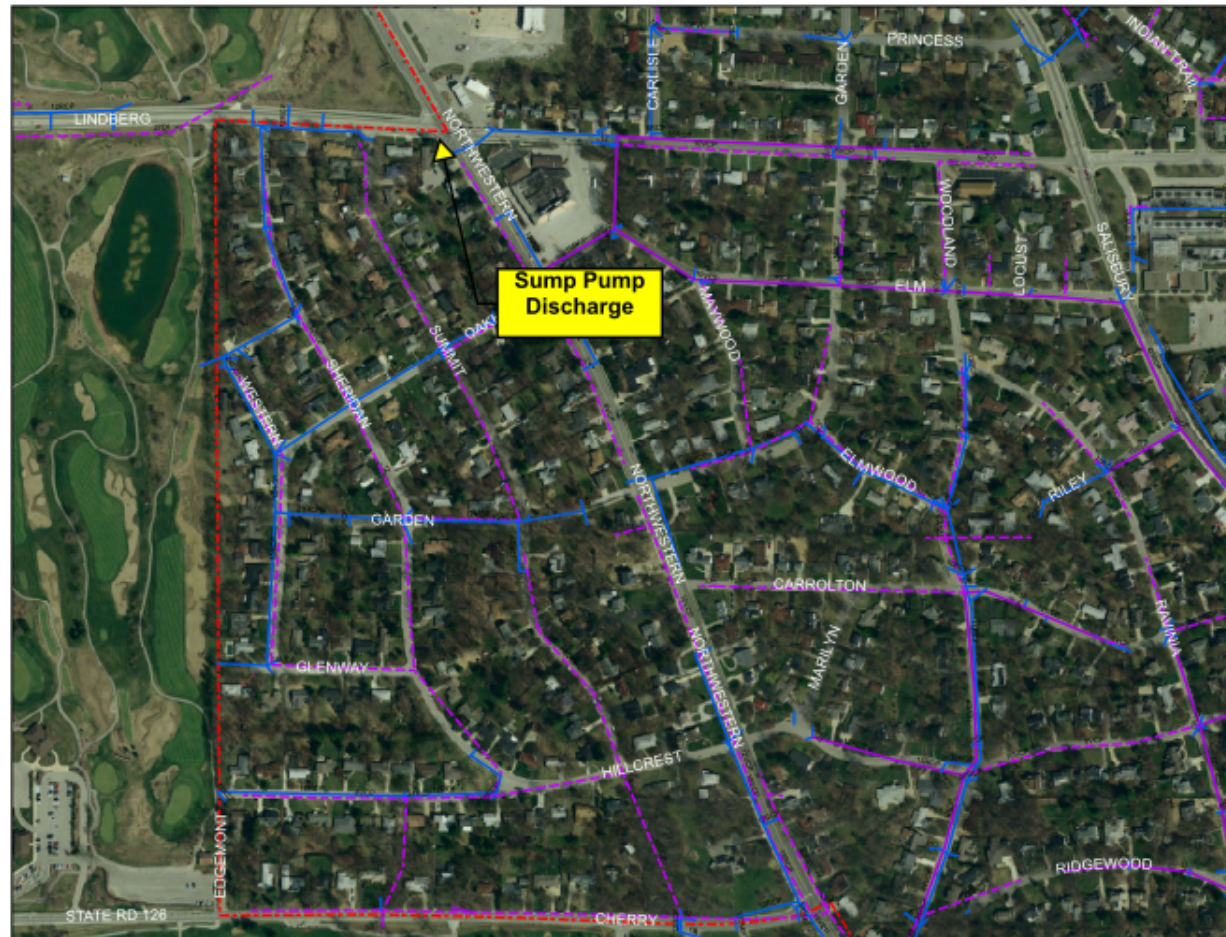


Salisbury Street: Two Projects

- Failing infrastructure and curb & gutter
- Drainage Improvements to be included in the Salisbury Street Phase 3 project
- Wide public benefits
- Estimated Project Cost: \$51,000



Northwestern Heights: Maintenance Projects



Northwestern Heights Sump Pump Discharge

- Sump pump discharges into intersection
- Removes street flooding and icing
- Intersection handles over 30,000 vehicles per day*
- Estimated Project Cost: \$65,000



University Farms: Maintenance Projects



University Farms: Benton Street Residential Flooding

- Yards flood and hold water during rain events
- Water reaches electrical box during larger storm events
- Area wide health benefits
- Directly benefits six or more properties
- Estimated Project Costs: \$85,000



University Farms: Sullivan Street Residential Flooding

- Yards flood and hold water during rain events
- Water reaches electrical box during larger storm events
- Area wide health benefits
- Directly benefits three or more properties
- Estimated Project Cost: \$25,000



University Farms: Noble Court Residential Flooding

- Yards flood and hold water during rain events
- Area wide health benefits
- Directly benefits two or more properties
- Estimated Project Cost: \$31,000



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Proposed City-Wide Maintenance Project	Total Estimated Project Cost*
Resident Yard Flooding in Bar Barry Heights	\$105,000
George Lummel Park Flooding	\$130,000
Bar Barry Heights – Sump Pump Discharge	\$46,000
Indian Trail Drive Street Flooding	\$19,500
Wabash Shores Resident Yard Flooding	\$91,500
Northwestern Heights Sump Pump Discharge	\$65,000
Nighthawk and Navajo Intersection Flooding	\$20,500
Salisbury Street – Two Projects	\$51,000
University Farms – Benton Street Residential Flooding	\$85,000
University Farms – Sullivan Street Residential Flooding	\$25,000
University Farms – Noble Court Residential Flooding	\$31,000
Total	\$669,500
*Programmed at approximately \$125,000-\$150,000/year	



Questions?



Next Steps:

1. Complete the Project Fact Sheets
2. Upload the Project Fact Sheets to the City website

